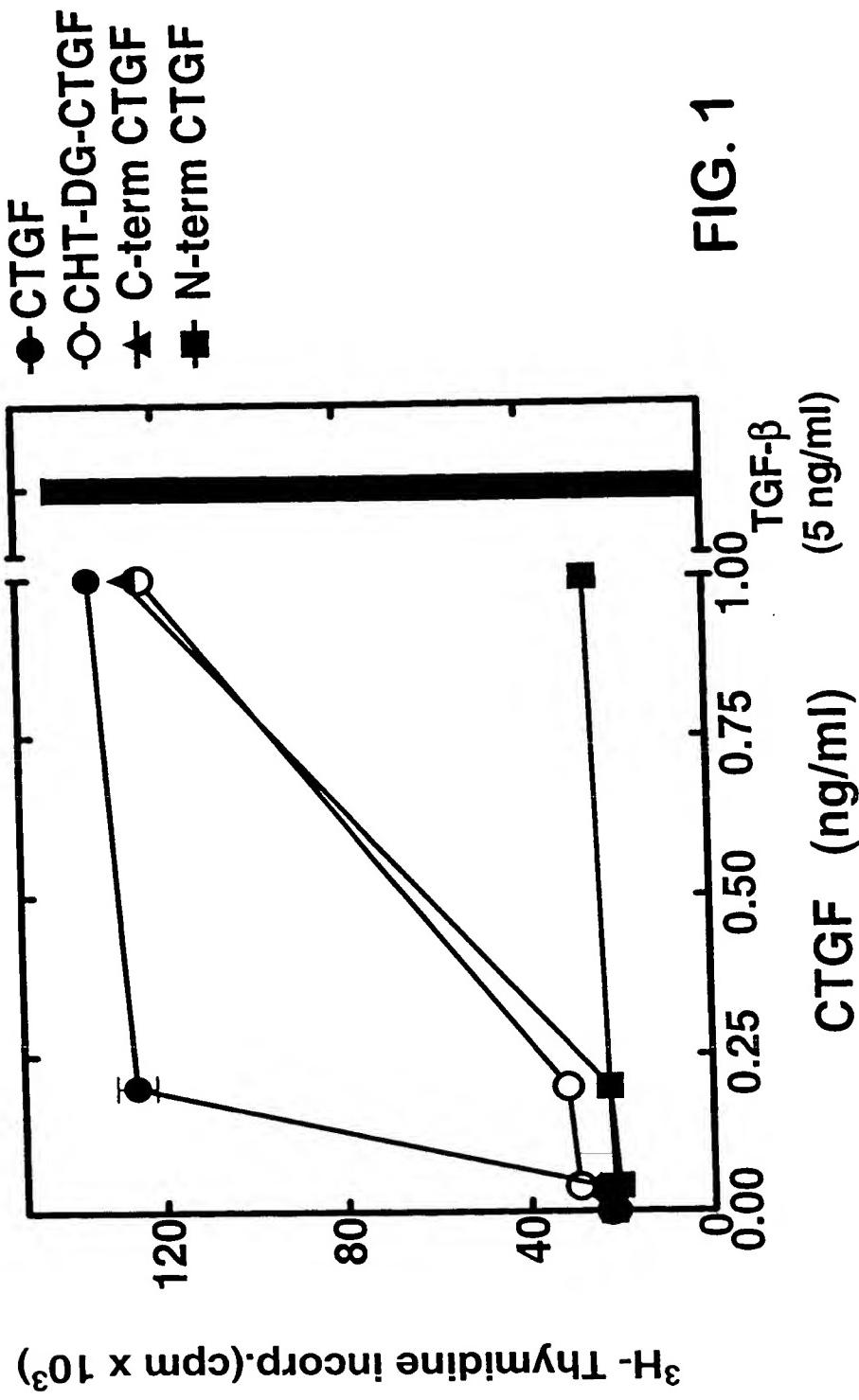


O I P E  
AUG 25 2003  
RESEARCH & TRADEMARKS

APPLICANT(S): Grotendorst and Neff  
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FRAGMENTS AND METHODS AND USES THEREOF  
Application No.: 09/461,646 Filing Date: December 14, 1999  
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# Mitogenic Activity of CTGF and CTGF Domains





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cccgccgcacagccccgagacgacagccccggcgctcccggtccccacacctccgaccaccgcca  
 gcgcctccaggccccgctcccgctcgccgccaccgcgcctccgcgtccgcccgcagtgcaca  
 accATGACCGCCGCCAGTATGGGCCCGTCGCCTCGTGGTCCTCCTC

M T A A S M G P V R V A F V V L L

GCCCTCTGCAGCCGGCCGGCGTCGGCCAGAACTGCAGCAGGGCGTGCCGGTGCCCCGGAC  
 A L C S R P A V G Q N C S G P C R C P D  
 | -> exon 2

GAGCCGGCGCCGCGCTGCCCGGGCGTGAGCCTCGTGGACGGCTGCAGGCTGCTGC  
 E P A P R C P A G V S L V L D G C G C C C

CGCGTCTGCGCCAAGCAGCTGGCGAGCTGTGCACCGAGCGCGACCCCTGCAGACCCGCAC  
 R V C A K Q L G E L C T E R D P C D P H

AAGGGCCTTTCTGTGACTTCGGCTCCCGCCAACCGCAAGATCGCGTGTGCACCGCC  
 K G L F C D F G S P A N R K I G V C T A  
 | ->

AAAGATGGTGCCTGCATCTCGGTGTACGGTACCGCAGCGGAGAGTCCTTCCAG  
 K D G A P C I F G G T V Y R S G E S F Q  
 exon 3

AGCAGCTGCAAGTACCAAGTGCACGTGCCTGGACGGGGCGGTGGCATGCCCTGTGC  
 S S C K Y Q C T C L D G A V G C M P L C

AGCATGGACGTTCGTCTGCCAGCCCTGACTGCCCTCCGAGGAGGGTCAAGCTGCC  
 S M D V R L P S P D C P F P R R V K L P

GGGAAATGCTGCGAGGAGTGGGTGTGACGAGCCAAGGACCAAACCGTGGTGGCCT  
 G K C C E E W V C D E P K D Q T V V G P

GCCCTCGCGGCTTACCGACTGGAAGACACGTTGCCAGACCCAACTATGATTAGAGCC  
 A L A A Y R L E D T F G P D P T M I R A  
 | -> exon 4

AACTGCCTGGTCCAGACACAGAGTGGAGCGCCTGTTCCAAGACCTGTGGATGGCATT  
 N C L V Q T T E W S A C S K T C G M G I

TCCACCCGGGTTACCAATGACAACGCCCTCGCAGGCTAGAGAAGCAGAGGCCCTGTGC  
 S T R V T N D N A S C R L E K Q S R L C

**FIG. 2-1**



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ATGGTCAGGCCTTGCAGCTGACCTGGAAGAGAACATTAGAAGGGCAAAAGTGCATC  
M V R P C E A D L E E N I K K G K K C I  
| -> exon 5

CGTACTCCCAAAATCTCCAAGCCTATCAAGTTGAGCTTCTGGCTGCACCAGCATGAAG  
R T P K I S K P I K F E L S G C T S M K

ACATACCGAGCTAAATTCTGTGGAGTATGTACCGACGGCCGATGCTGCACCCCCCACAGA  
T Y R A K F C G V C T P G R C C T P H R

ACCACCACTGCCGGTGGAGTTCAAGTGCCTGACGGCGAGGTCAATGAAGAAGAACATG  
T T T L P V E F K C P D G E V M K K N M

ATGTTCATCAAGACCTGTGCCTGCCATTACAACGTGCCCCGGAGACAATGACATCTTGAAT  
M F I K T C A C H Y N C P G D N P I F E

TCGCTGTACTACAGGAAGATGTACGGAGACATGGCATGAagccagagagtgagagacatt  
S L Y Y R K M Y G D M A \*

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**FIG. 2-2**



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GCCCTCGGGCTTACCGACTGGAAGACACGTTGCCAGACCCAACTATGATTAGAGCC  
 A L A A Y R L E D T F G P D P T M I R A  
 | -> exon 4

AACTGCCTGGTCCAGACCACAGAGTGGAGCGCCTGTTCCAAGACCTGTGGATGGCATC  
 N C L V Q T T E W S A C S K T C G M G I

TCCACCCGGGTTACCAATGACAACGCCCTCCTGCAGGCTAGAGAAGCAGAGCCGCCTGTGC  
 S T R V T N D N A S C R L E K Q S R L C

ATGGTCAGGCCTTGCAGCTGACCTGGAAGAGAACATTAAGAAGGGCAAAAGTCATC  
 M V R P C E A D L E E N I K K G K K C I  
 | -> exon 5

CGTACTCCAAAATCTCCAAGCCTATCAAGTTGAGCTTCTGGCTGCACCAGCATGAAG  
 R T P K I S K P I K F E L S G C T S M K

ACATACCGAGCTAAATTCTGTGGAGTATGTACCGACGGCCATGCTGCACCCCCCACAGA  
 T Y R A K F C G V C T D G R C C T P H R

ACCACCACCCCTGCCGGTGGAGTTCAAGTGCCTGACGGCGAGGTATGAAGAAGAACATG  
 T T T L P V E F K C P D G E V M K K N M

ATGTTCATCAAGACCTGTGCCATTACAACGTCCCAGACAATGACATCTTGAA  
 M F I K T C A C H Y N C P G D N D I F E

TCGCTGTACTACAGGAAGATGTACGGAGACATGGCATGAagccagagagtgagagacatt  
 S L Y Y R K M Y G D M A \*

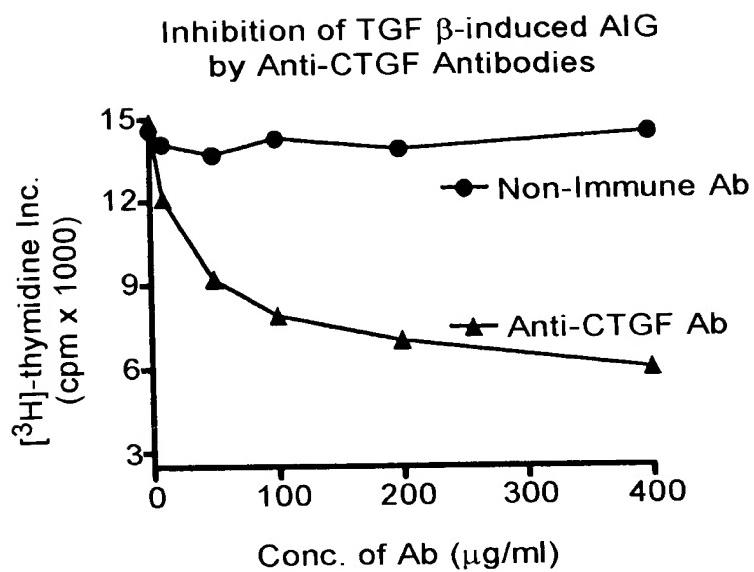
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 aatttaaagggtttgtgcctttattttgttttaatgcattgatattcaatgttagcc  
 tcaatttctgaacaccataggtagaatgtaaagcttgcattcgtcaagcatgaaatgga  
 tacttatatggaaattctgctcagatagaatgacagtcgtcaaaacagattgtttgcaaagg  
 ggaggcatcagtgtctggcaggctgattctaggaaatgtggtagctcacg

**FIG. 3**



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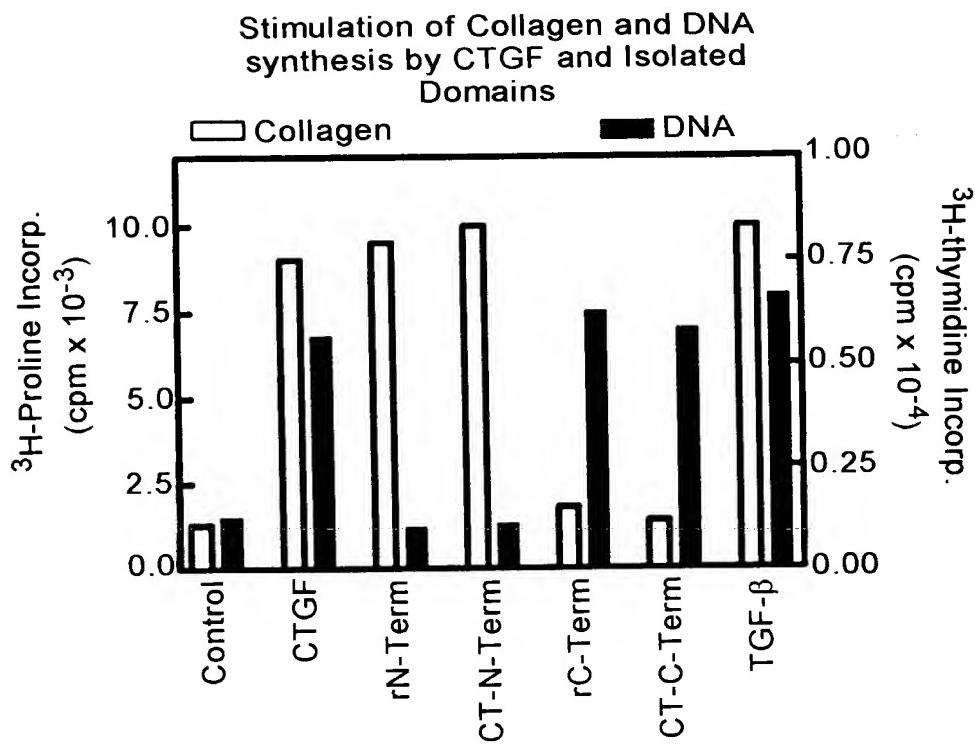


**FIG. 4**



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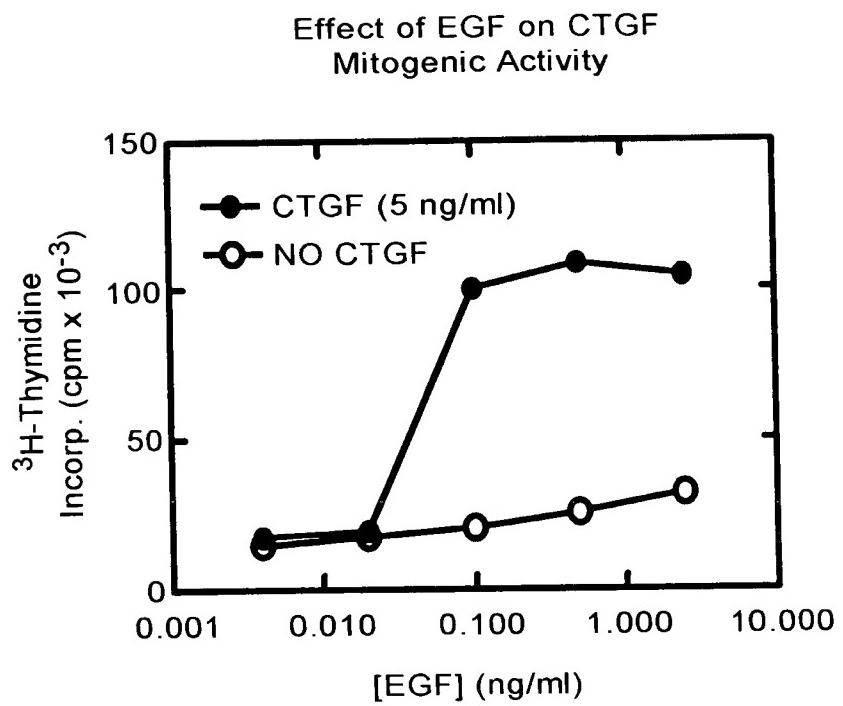


**FIG. 5**



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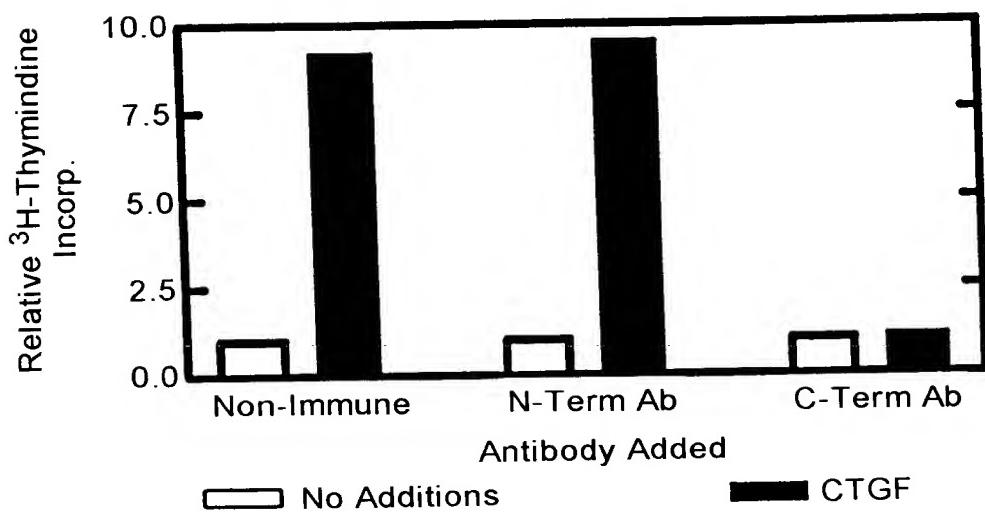
**FIG. 6**



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Selective Inhibition of DNA  
Synthesis is by anti-CTGF  
C-Terminal Ig G



**FIG. 7**